REMARKS

Applicant has carefully considered the Examiner's Office Action and has amended the specification and claims responsively to define the invention in clearer form and to distinguish patentably from the prior art.

Thus, applicant has amended the base claim 16 further to include the subject matter and limitations that are not to be found in the prior art.

Claim 19 has been further amended to provide for clarification.

In considering applicant's invention in relation to the prior art, the reference patent to Berchem (4,662,047)discloses a multi-axes forging the process in which the forging tool is moved solely in the direction of the axis 5. Understandably the work piece which is to be shaped is thereby pressed in the different directions in the hollow form spaces of the forging tool, as shown by the arrows in Figure 1 of this reference.

This arrangement is described at various locations in the references where the Examiner has cited them.

The Examiner points further to the bores or form stampings of the bearing bores as described in the reference patent in column 4, lines 1 to 30. These bores or form stampings, however, do not belong to shaping by forging processes. Instead, they represent an independent work operation. From system technology, a bore or stamping process is different from a forging process, since the forging process is a stressless shaping process, whereas the bore or stamping process is one that results in stresses.

Applicant further points to the specification on page 8, last paragraph. After the first sentence of this paragraph it is noted that "sides 6 will eventually be bored through to accommodate an unillustrated bolt without the use of a sleeve."

These bores are produced independent of the manufacturing steps (A) and (B) defined in claim 16 for producing the basic

member. The sides 6 are then bored through later in a sleeveless manner.

It is submitted that the reference patent to Berchem does not at all teach any form changing, borings, or wall strengths with different thicknesses in the skirt.

Accordingly, the reference patent to Berchem has no material bearing on applicant's invention.

It is submitted that applicant provides for a new and marked improvement over the prior art reference patent to Berchem.

Since the claims in the application define clearly the differences between applicant's invention and the prior art, it is believed that the claims should be found allowable.

The Examiner's attention is respectfully directed to the court decision in the case of In re Bisley (94 U.S.P.Q. 80, 86) in which the Court decided that patentability is gauged not only by the extent or simplicity of physical changes, but also by the perception of the necessity or desirability of making such changes to produce a new result. When viewed after disclosure, the changes may seem simple and such as should have been obvious to those in the field. However, this does not necessarily negate invention or patentability. The conception of a new and useful improvement must be considered along with the actual means of achieving it in determining the presence or absence of invention. The discovery of a problem calling for an improvement is often a very essential element in an invention correcting such a problem. Though the problem, once realized, may be solved by use of old and known elements, this does not necessarily negate patentability.

Furthermore, in the case of ex parte Chicago Rawhide Manufacturing Company (226 U.S.P.Q. 438), the Patent Office Board of Appeals ruled that the mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal, is not by itself, sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the

benefit of appellant's specification, to make the necessary changes in the reference device. The Examiner has not presented any evidence to support the conclusion that a worker in this art would have had any motivation to make the necessary changes in the reference device to render the here-claimed device unpatentable.

In the case of The Standard Oil Company vs. American Cyanamid Company (227 U.S.P.Q. 293), the Court ruled that the issue of obviousness is determined entirely with reference to a hypothetical person having ordinary skill in the art. It is only that hypothetical person who is presumed to be aware of all the pertinent prior art. The actual inventor's skill is irrelevant to the inquiry, and this is for a very important reason. The statutory emphasis is on a person of ordinary skill. Inventor's, as a class, according to the concepts underlying the constitution and the statutes that have created the patent system, possess something that sets them apart from the workers of ordinary skill, and one should not go about determining obviousness under 35 U.S.C. 103 by inquiring into what patentees (i.e., inventors) would have known or would likely have done, faced with the revelation of references. A person of ordinary skill in the art is also presumed to be one who thinks along the line of conventional wisdom in the art and is not one who undertakes to innovate, whether by patient, and often expensive systematic research or by extraordinary insight; it makes no difference which.

With respect to combining references, as the Examiner has done, the Court decided in the case of Uniroyal Inc. versus Rudkin-Wiley Corporation (5 U.S.P.Q.2d 1434) that when prior art references require a selective combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself. Something in the prior art as a whole must suggest the desirability, and thus the obviousness of making the combination.

The preceding decision is reinforced by the case In re Dow Chemical Company (5 U.S.P.Q.2d 1529), in which the Court ruled that most technological advance is the fruit of methodical persistent investigation, as is recognized in 35 U.S.C. §103. The consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have reasonable likelihood of success, viewed in the light of the prior art. Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure.

In the case of United Merchants and Manufacturers Incorporated versus Ladd (139 U.S.P.Q. 199), the District Court ruled that although from simplicity of device, and with advantage of hindsight, one might offhandedly be of opinion that anyone should have been able to make invention after studying prior art, claims are allowed since none of the references discloses or suggests the concept which is the crux of the invention.

In the case of Ex parte Fleischmann (157 U.S.P.Q. 155), the Patent Office Board of Appeals ruled that while it might be possible to select features from secondary references and mechanically combine them with primary reference to arrive at applicant's claim combination, there is no basis for making such combination disclosed or suggested in references; only applicant's specification suggests any reasons for combining references; under 35 U.S.C. 103, that does not constitute a bar.

Finally, in the case of Meng and Driessen (181 U.S.P.Q. 94), the Court ruled that progress in crowded arts, usually made in small increments, is as important as it is in arts at the pioneer stage; constitution envisages and seeks progress in useful "arts," not just in those more esoteric or scientific.

The Examiner has objected to claims 16, 19, 20, and 26 in the first paragraph on page 2 of the Office Action. However, the objections listed there in the Office Action, have been responded

to in the Supplemental Amendment that was filed by fax on the 29 October 2002.

This Supplemental Amendment was filed in response to a telephone interview that was held with the Examiner on the same date of 29 October 2002.

It appears that this Supplemental Amendment may have been overlooked in preparing the Office Action of November 14, 2002.

The Examiner has further rejected claims 18, 19, and 26 under 35 U.S.C. 112, first paragraph. The Examiner contends that the subject matter of claims 18 and 19, for example, are not to be found in the specification.

It is submitted, however, that the subject matter of claims 18 and 19 is to be found in claims 3 and 4 which were originally filed with the application. Consequently, claims 3 and 4 provide proper antecedent basis for claims 18 and 19.

Applicant has amended the specification to include the subject matter of claims 3 and 4 so as to provide the required antecedent for claims 18 and 19.

With respect to the Examiner's rejection of claims 22 and 24 under 35 U.S.C. 112, second paragraph, applicant notes that the objections that the Examiner has raised against claims 22 and 24 have been responded to previously in the Supplemental Amendment of October 29, 2002.

Accordingly, the objections raised by the Examiner to claims 22 and 24 should have been overcome in the previously Supplemental Amendment.

It is believes, therefore, that with the present amendments to the specification and claims, the Examiner's objections and rejections have been responded to.

It is respectfully requested, therefore, that the claims in the application be allowed and the case be passed to issue.

Should the Examiner require or consider it advisable to further amend the specification and claims in formal respects to place the application in condition for final allowance, then it is respectfully requested that such amendments be carried out by

Examiner's Amendment, through a phone call to applicant's representative, and the case passed to issue.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D. C. 20231, on 12-26-02

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VERSION WITH MARKINGS TO SHOW THE CHANGES THAT HAVE BEEN MADE

and 16 slide over surfaces 19 and 20 in lower die half 12. In initial manufacturing step A, upper die half 11 is displaced along with its tool parts 13, 14, and 15 along the axis 1' of lower die half 12. Tool parts 16 are in a position ready to carry out along the perpendicular the reshaping operations comprising the initial manufacturing step A represented in Figure 1. Next, piston-and-cylinder mechanism 18 displaces tool parts 16 along axis 1", preparing them to carry out the shaping operations comprising subsequent manufacturing step B.

Figure 3 is a perspective view of a piston 7 manufactured out of blank 1 over the course of manufacturing steps A and B, with sides 6 inside circumference 21. Sides 6 will eventually be bored through to accommodate an unillustrated bolt without the use of a sleeve. This bolt will be shorter than those employed in the prior art. Skirt 22 matches the circumference 21 of piston 7, its wall is optimally thick, and it extends into the radially recessed sides 6 by way of webs 23.

amended to insert the subject matter of claims 3 and 4.

16. A method of manufacturing an entire piston for internal-combustion engines comprising the steps of: (A) manufacturing initially a blank to constitute a piston by preliminarily forging along a first prescribed axis, and shaping specific contours on the forged blank to form a preliminarily-shaped piston; [and] (B) at least one subsequent manufacturing step of forging the preliminarily-shaped piston along at least one other second axis for creating additional contours, said piston being formed by two separate forging steps, each of said steps having a different contour along a different axis, and boring through sides of said piston independent of the manufacturing steps (A) and (B) for receiving a sleeveless bolt.

19. A method as defined in Claim 16, wherein said additional contours are shaped onto the preliminarily-shaped piston along said second other axis by forging, said first prescribed axis being a longitudinal axis.

20. A method as defined in Claim 16, wherein the initial manufacturing step (A) along the first prescribed axis and the subsequent manufacturing step (B) along the other second axis are carried out in the same forging tool into which said bank can be heated before insertion.

22. A method as defined in Claim 16, including the step of shaping an integrated skirt in one of the two manufacturing steps onto the preliminarily shaped piston, said skirt being shaped during the subsequent manufacturing step (B).

24. A method as defined in Claim 16, including an additional manufacturing step for reforming said piston.

26. A method of manufacturing pistons and components for pistons for internal-combustion engines comprising the steps of: (A) manufacturing initially a blank to constitute a piston by preliminarily forging along a prescribed axis, and shaping specific contours on the forged blank to form a preliminarily-shaped piston; and (B) at least one subsequent manufacturing step of forging the